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Medtronic Deep Brain Stimulation (DBS): The Road to the 100,000th Implant



What is DBS? **Medtronic DBS Therapy uses a surgically implanted medical device, similar to a cardiac pacemaker, to deliver mild electrical pulses to precisely targeted areas of the brain to treat the symptoms of movement disorders and other neurological conditions.**

Fast Facts:

PARKINSON'S DISEASE

As many as **one million Americans** and **7 to 10 million people worldwide** are living with Parkinson's disease, and a subset of these patients are approved to receive Medtronic DBS Therapy in the U.S. Approximately **60,000 Americans** are diagnosed with Parkinson's

disease **each year**, and the risk of developing Parkinson's increases with age. The combined direct and indirect costs of Parkinson's is estimated to be nearly **\$25 billion per year** in the United States alone.¹

ESSENTIAL TREMOR

Essential Tremor, a neurological disorder affecting an estimated **10 million Americans**, causes shaking that can significantly impact activities of daily living; **less than 60% of people** with essential tremor respond well to standard oral medications.² A subset of these patients are approved to receive Medtronic DBS Therapy in the U.S.

DYSTONIA

Dystonia is a neurological movement disorder that causes muscles to contract involuntarily, affecting as many as **250,000 people** in the United States.³ Medtronic DBS Therapy for dystonia is approved in the U.S. for a limited number of patients under a Humanitarian Device Exemption (HDE).

OBSESSIVE-COMPULSIVE DISORDER (OCD)

OCD affects about **2.2 million** American adults,⁴ with direct and indirect **costs of \$8.4 billion**, which is **5.7%** of the estimated \$147.8 billion cost of all mental illness.⁵ Medtronic DBS Therapy for OCD is approved in the U.S. for a limited number of patients under an HDE.

EPILEPSY

About **50 million people** worldwide have epilepsy, **30% or more** of whom may not be treatable with standard oral medications.⁶ Medtronic DBS Therapy for epilepsy is not approved for use in the U.S.

Important Note: These therapies are not for everyone. DBS Therapy requires brain surgery which could have serious or even fatal complications. Other complications can occur and may require additional surgery. Medtronic DBS Therapy may cause worsening of some symptoms. Patients should always discuss the potential risks and benefits of the therapy with a physician.

1980s



1987

Medtronic DBS Therapy is implanted for the first time in Grenoble, France.



1993

Medtronic DBS Therapy receives approval (CE Mark) in Europe for essential tremor.

1995
10,000th
person

worldwide receives Medtronic DBS Therapy.



CE Mark approval in Europe for treating tremors associated with Parkinson's disease.



1997

Medtronic DBS Therapy receives Food and Drug Administration (FDA) approval to treat essential tremor and tremor associated with Parkinson's disease.

1998

Medtronic DBS Therapy approved in Europe for advanced Parkinson's disease.



2002

Medtronic receives FDA approval of DBS Therapy for the treatment of advanced Parkinson's disease.



2003

Medtronic DBS Therapy receives approval in Europe and Humanitarian Device Exemption (HDE)* approval in the U.S. for managing the symptoms of primary dystonia.



2007
50,000th
person

worldwide treated with Medtronic DBS Therapy.

2009

Medtronic DBS Therapy receives approval in Europe and an HDE* approval in the U.S. for the treatment of Obsessive-Compulsive Disorder (OCD).

2010

European approval of Medtronic DBS Therapy to treat medically refractory epilepsy patients with partial-onset seizures.[†]



2012

Medtronic DBS Therapy receives approval in Australia and Canada for the treatment of medically refractory epilepsy patients with partial-onset seizures.[†]

100,000th
person

worldwide treated with Medtronic DBS Therapy.

Medtronic DBS Therapy for Parkinson's Disease delivers electrical stimulation to areas in your brain to help treat advanced Parkinson's disease. Electrical stimulation can be delivered to both sides of your brain to help relieve symptoms on both sides of your body. You may be a candidate for this therapy if your symptoms respond to levodopa, but levodopa and/or other medications have become less effective or ineffective.

Medtronic DBS Therapy for Essential Tremor delivers electrical stimulation to an area in your brain to help treat Essential Tremor or tremor associated with Parkinson's disease. Electrical stimulation is only delivered to one side of your body and is used to treat tremor in one arm of your body. The system is used in patients who are diagnosed with Essential Tremor or Parkinsonian tremor not adequately controlled by medications and where the tremor is disabling.

Medtronic DBS Therapy for Dystonia delivers electrical stimulation to an area of your brain to help treat chronic, intractable (drug refractory) primary dystonia, including generalized and segmental dystonia, hemidystonia, and cervical dystonia (torticollis), and you are 7 years old or older.

Reclaim DBS for OCD Therapy delivers electrical stimulation to an area of your brain to help treat Obsessive-Compulsive Disorder. Electrical stimulation is delivered to both sides of your brain to help relieve OCD symptoms. You may be a candidate for this therapy if you are an adult patient who has been diagnosed with chronic, severe, treatment-resistant OCD and have failed at least three selective serotonin reuptake inhibitors.

1. Parkinson's Disease Foundation Web site. http://www.pdf.org/en/parkinson_statistics Accessed: December 10, 2012.

2. International Essential Tremor Foundation. <http://www.essentialtremor.org/Facts-about-ET> Accessed: December 10, 2012.

3. American Association of Neurological Surgeons Web site. <http://www.aans.org/Patient%20Information/Conditions%20and%20Treatments/Dystonia.aspx> Accessed: December 10, 2012.

4. National Institutes of Health Web Site. <http://report.nih.gov/NIHfactsheets/ViewFactSheet.aspx?csid=54&key=O> Accessed: December 10, 2012.

5. DuPont RL, et al. Economic costs of obsessive-compulsive disorder. Medical Interface. 1995; 8:102-9.

6. World Health Organization. <http://www.who.int/mediacentre/factsheets/fs999/en/index.html> Accessed: December 10, 2012

* Humanitarian Device: The effectiveness of this device for the treatment of dystonia and obsessive-compulsive disorder (OCD) has not been demonstrated.

† Medtronic DBS Therapy for epilepsy is approved for use in the E.U., Australia and Canada; not approved for use in the U.S.